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Julia A Hodge
BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025

EXAMINER

MENON, KRISHNAN S

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/738,465
Filing Date: December 17, 2003
Appellant(s): SIBBETT, SCOTT

MAILED
SEP 13 2007
GROUP 1700

Julia A. Hodge
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7/19/07 appealing from the Office action mailed 10/18/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 2005/0103713	RAMSEY	MAY 2005
WO 96/12541	HOLMES	MAY 1996

US 5,571,410

SWEDBERG

NOVEMBER 1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsey et al (US 2005/0103713).

This reference has a US filing date of July 30, 2004, with a priority date of July 30, 2003 to a provisional application, which is accessible through PAIR. The date of the provisional application is a 102(e) date.

Ramsey teaches an apparatus comprising first and second substrates stacked together, the substrates having open channels that are misaligned to one-another forming communications points as claimed; channels are parallel, and equidistant, and made of silicon – see figure 17 and paragraph 49, 31, 34, etc. Channel dimensions in nm – see paragraph 40. Side panels 116, the third and fourth substrates, are shown in figure 18A-C. Material 'quartz': the reference uses SiO₂; quartz is SiO₂, oxide of silica.

Ramsey does not teach the number of channels in the substrate. However, the number of channels would depend on the functional requirements such as the number of samples to be treated, etc, and can be optimized. Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The number of channels also would be only a relative dimensional difference. Also, In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that; where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.).

2. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsey as applied to claims 1 above and further in view WO 96/12541.

Claim 12 differs from the material of the third and fourth substrates, silicon oxynitride. Ramsey teaches the various layers as of different materials and the side panels 116 as being deposited, and WO'541 teaches depositing silicon oxynitride (page 14 line 20). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of WO in the teaching of Ramsey to have the layers 116 made of silicon oxynitride for deposition because Ramsey does not specify the material for deposition.

With respect to claim 13, the angle between the channels of the first and second substrate is also only a dimensional issue. In re Gardner, etc. In addition, WO teaches various patterns for the channel intersections, in a similar multilayer, multi-channel device (see figure 13). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of WO'451 in the teaching of Ramsey because of the benefits afforded by the design of WO'451 (page 21, second paragraph).

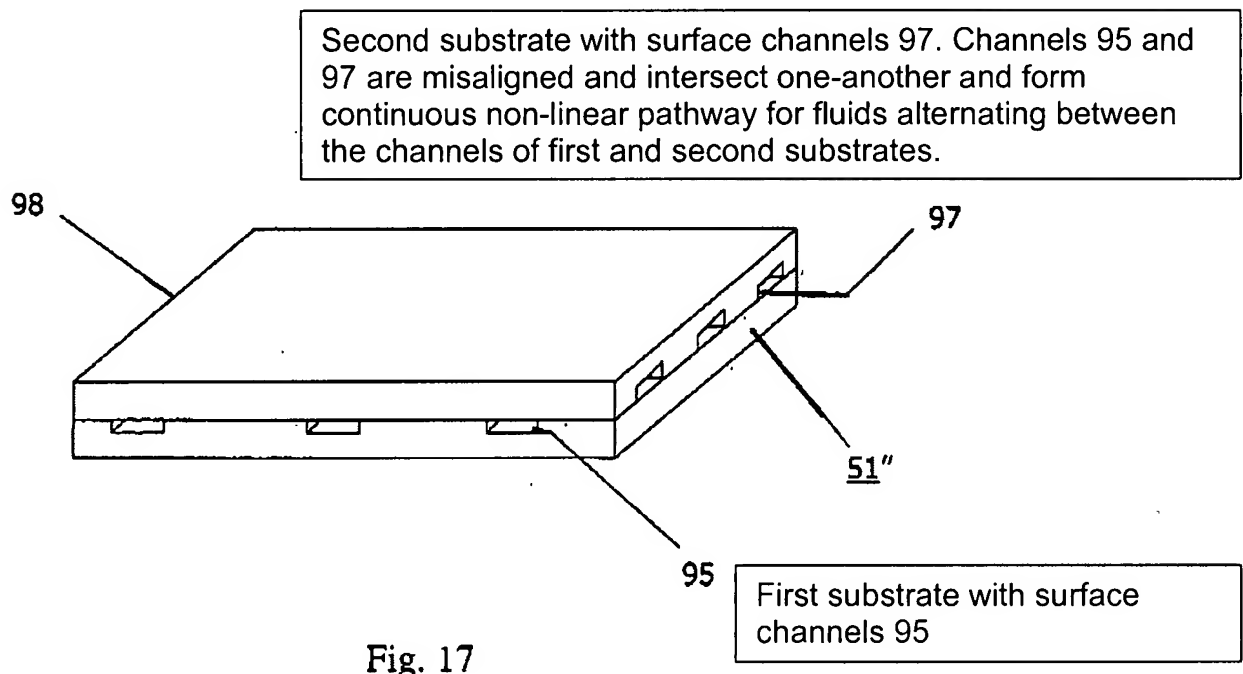
3. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsey as applied to claim 1 above, and further in view of Swedberg et al (US 5,571,410).

The claim differ from the teaching of Ramsey in the recitation of the electrode. However, using electrodes for sample transport and detection is known in the art as taught by Swedberg; one would use the teaching of Swedberg in the teaching of Ramsey for providing the motive force or a a detector as taught by Swedberg (column 8 lines 37-67)

(10) Response to Argument

A. Rejection of claims 1-11 under 35 USC 103(a) as obvious over Ramsey:

Appellant's claim 1 is illustrated below using Ramsey's figure 17.



The channels are of nanoscale – 110-370 nm: see paragraph 0040 of Ramsey.

Ramsey does not specify the number of intersecting channels to be at least about 1000 in figure 17. However, the number of channels required can be optimized to the desired number of samples to be handled or other variables, such as upstream or downstream process/analytical equipment limitations. The number of channels is also only a dimensional limitation, which is not patentable: In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and

the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. Moreover, appellant has not provided any secondary evidence for patentability over Ramsey.

With respect to appellant's argument that Ramsey does not teach the non-linear path, the examiner does not believe that the reference has to state verbatim the claim limitation for the reference to anticipate the claim, or make the claim obvious. The channels of figure 17 as shown above intersect, forming the non-linear pathways as claimed.

Regarding the argument:

"Applicants do not believe that Ramsey et al teaches a device that would work to separate a sample solution containing three or more molecules having different effective molecular diameters into three or more component molecular fractions.",

This argument is not commensurate in scope with the claims – there is no such limitation in the claims. Moreover, such a limitation also would be only functional; claims are for a device; and because the device of the reference is as claimed, it should also have capability to perform such functions.

B. Rejection of claims 12 and 13 over Ramsey in view of WO'541

Claim 12 recites the third and fourth substrate material as silicon oxynitride. WO'541 was used for its teaching of the substrate material. Appellant's argument that WO'541 does not teach nanoscale channels is not commensurate with the rejection.

With respect to claim 13, the angle of misalignment of the channels does not appear to be critical. Appellant has not provided any secondary evidence to indicate that this would be a patentable limitation. Therefore the selection of the angle would be only an engineering choice of dimensioning.

WO'541 teaches various patterns of crisscrossing channels with angles in the range as claimed. WO'451 teaches transferring solutes between immiscible fluids flowing through the crisscrossing channels – see abstract and figures. It would also be obvious to one of ordinary skill in the art at the time of invention to use the teaching of WO'541 in the teaching of Ramsey for such functions as taught by WO'451 and the benefits afforded by WO'541 as indicated in the rejection.

C. Rejection of claim 32 over Ramsey in view of Swedberg:

As is shown in the rejection, providing electrodes for electromotive force to move molecules through the channels is well known in the art, and is particularly used in electrophoresis, etc. Applicant has not traversed this rejection, and the arguments presented are to the effect that the references do not teach all the limitations, which were addressed above. Therefore, effectively, appellant admits that this limitation is known in the art. [MPEP 2144.04: "If applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate, the examiner should clearly indicate in the next Office action that the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice or that the traverse was inadequate".]

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


Krishnan S Menon
Primary Examiner
Art Unit 1723

Conferees:

/Romulo Delmendo/
Romulo Delmendo
Appeals Specialist

/David R. Sample/
David Sample, SPE 1723